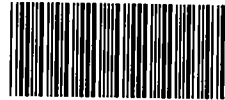




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Mr. David Turner
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Subject:

ISVS System Optimization Request, LORD Shope Landfill, Girard, Pennsylvania.

ENVIRONMENT

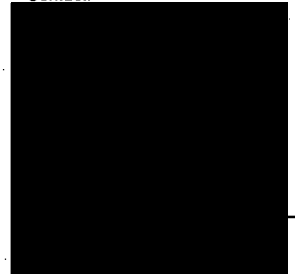
Dear Mr. Turner:

On behalf of LORD Corporation (LORD), ARCADIS is submitting this request to modify the operation period of the in-situ vapor stripping (ISVS) system at the LORD Shope Landfill, Girard, Pennsylvania (Site). The ISVS system and groundwater treatment system are operated at the Site to remediate volatile organic compounds (VOCs) in the vadose zone beneath the landfill cap and in groundwater beneath the Site. As provided in the previous ISVS system optimization submitted on May 29, 2007, and approved by the United States Environmental Protection Agency (US EPA) on October 25, 2007, currently, the ISVS system is operating on a 6 month on/off schedule, with operation during the warm weather months (May through October).

Date:

March 10, 2009

Contact:



Site History

The Site is an inactive industrial waste landfill in Girard Township, Erie County, Pennsylvania. From the mid-1950s until 1979, industrial wastes, including solvents, spent adhesives, cutting oils, acids, caustics, paper, wood and rubber wastes were disposed at the Site. At the time the wastes were received, the property was owned by the late Mr. Melvin Shope, an employee of LORD. The wastes originated at LORD's Erie (12th Street) and Saegertown plants.

Our ref:

OH000933.2009.00001

From 1982 to 1983, remedial activities were conducted at the Site including: re-grading of the waste, installation of an upgradient cut-off wall, installation of a composite cap, and improvements in stormwater management. In September 1983, the site was placed on the National Priorities List (NPL). Since that time, the environmental conditions of the Site have been extensively investigated. LORD has been collecting groundwater quality data from the Site since 1983.

Site remediation was augmented following the completion of a Remedial Investigation/Feasibility Study. These additional active remedies include the ISVS

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system, which became operational in December 1995, and the groundwater recovery and treatment system, which became operational in June 1996. Off-gas treatment was provided for the ISVS system to minimize VOC air emissions. According to the current Pennsylvania air emission exemption policy dated July 26, 2003, VOC sources that will cause an increase of less than 2.7 tons per year (TPY) are not required to get permit approval.

Performance of ISVS System

The off-gas treatment component of the ISVS system consists of a thermal oxidizer that has been operating since start-up of the ISVS system to treat the mass of VOCs removed during vapor recovery. A layout of the system is provided (Figure 1).

VOC concentrations have steadily decreased since system start-up. The total annual VOC emissions have been below the 2.7 TPY Pennsylvania requirements for 6 consecutive years (2003 through 2008).

Natural gas is used to fuel the thermal oxidizer component of the ISVS system. Some remediation systems are self-sustainable and capable of operating without supplemental fuel; however, the low concentrations of VOCs recovered at the LORD Shope landfill require the use of natural gas for system operation. Natural gas requirements for 2005, 2006, 2007, and 2008 were 4,220,400, 4,219,900, 2,017,000, and 2,200,000 cubic feet, respectively. In 2007 and 2008 the significant decrease in natural gas usage was directly related to the reduced operational period of the thermal oxidizer. The thermal oxidizer operated for 5 months in 2007 and 6 months in 2008. Electric power is also necessary to operate the system blowers. The annual electric consumption of the ISVS system is approximately 75,000 kilowatt hours (kWh). Therefore, approximately 37,500 kWh were saved by operating the ISVS system for half of the year, in each of 2007 and 2008 (approximately 75,000 kWh total).

The reduced natural gas and electric power usage has resulted in a reduction of total system carbon dioxide output. Approximately 50% less carbon dioxide was emitted in 2007 and 2008 than previous years; using US EPA's emission factor information (PA AP-42, Fifth Edition, Volume 1, Chapter 1- External Combustion Sources, Section 1.4- Natural Gas Combustion, Table 1.4-2) this equates to approximately 600,000 pounds of carbon dioxide.

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March 10, 2009**Recommendations**

LORD requests US EPA approval to modify the operation period of the ISVS system. LORD proposes that the system be run on a bi-monthly on/off cycle during warm periods. This reduced operation schedule will provide information to: 1) optimize the new thermal oxidizer; 2) assess the effective VOC recovery versus a longer operational period; and 3) further reduce the use of natural gas, electronic consumption, and carbon dioxide emissions by approximately 50%. The ISVS system will continue to be operated according to the remedy agreement in place between LORD and the US EPA during the months of May, July, and September. The ISVS system will continue to be winterized and shut off from October 1st through April 30th. Rationale for operating the system during the period above is presented below:

- Operating data from May 2008 through October 2008 (Figure 2) generally shows that influent VOC concentrations remained constant. Month-to-month variation is most likely a product of water table fluctuation.
- Reduction of Natural Gas Usage: By reducing the operation of the ISVS system in 2007 and 2008, approximately 4,000,000 SCF (standard cubic feet) of natural gas was saved over the two year period. If the ISVS system is operating as proposed, the additional savings would be approximately 1,000,000 SCF per year (approximately a 50% reduction). The total annual savings related to ISVS system optimization would be approximately 3,000,000 SCF annually, when compared to pre-2007 operation.
- Reduction in Electric Usage: Two 5-horsepower process blowers and one 1.5-horsepower combustion blower will not need to operate when the thermal oxidizer is off-line. This will reduce the annual electric consumption by approximately 18,750 kWh when compared with 2008. Overall this will be a reduction of approximately 56,250 kWh of electricity when compared to pre-2007 operation.
- The above reductions in natural gas and electric usage greatly decrease the overall carbon dioxide emissions. Using US EPA's emission factor information, the proposed ISVS system operation period will decrease the carbon dioxide emitted by approximately 150,000 pounds when compared to 2008. When compared to pre-2007 operation the total carbon dioxide emissions will be reduced by approximately 450,000 pounds annually.

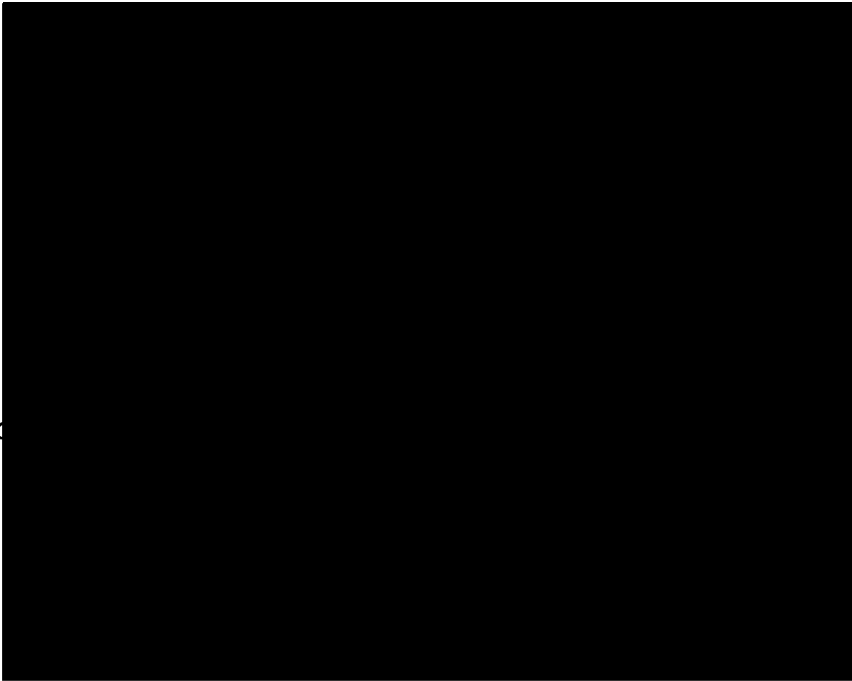
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- Passive venting of landfill vapors will be controlled by closing all piping valves from the landfill during non-operation periods. Additionally, the impermeable cap construction of the landfill will prevent venting during the proposed reduced operation.

LORD will continue to operate the groundwater recovery and treatment system, and the groundwater monitoring program will continue for ongoing compliance and plume attenuation can be demonstrated. LORD will evaluate data which will be collected on a bi-monthly basis during the operation period of the ISVS system to determine that the system is operating at expected performance.

LORD and ARCADIS are available to discuss this request with you at your convenience. Please contact Mr. George Kickel of LORD at (814) 868-0924, extension 3393, or our office if you have questions.

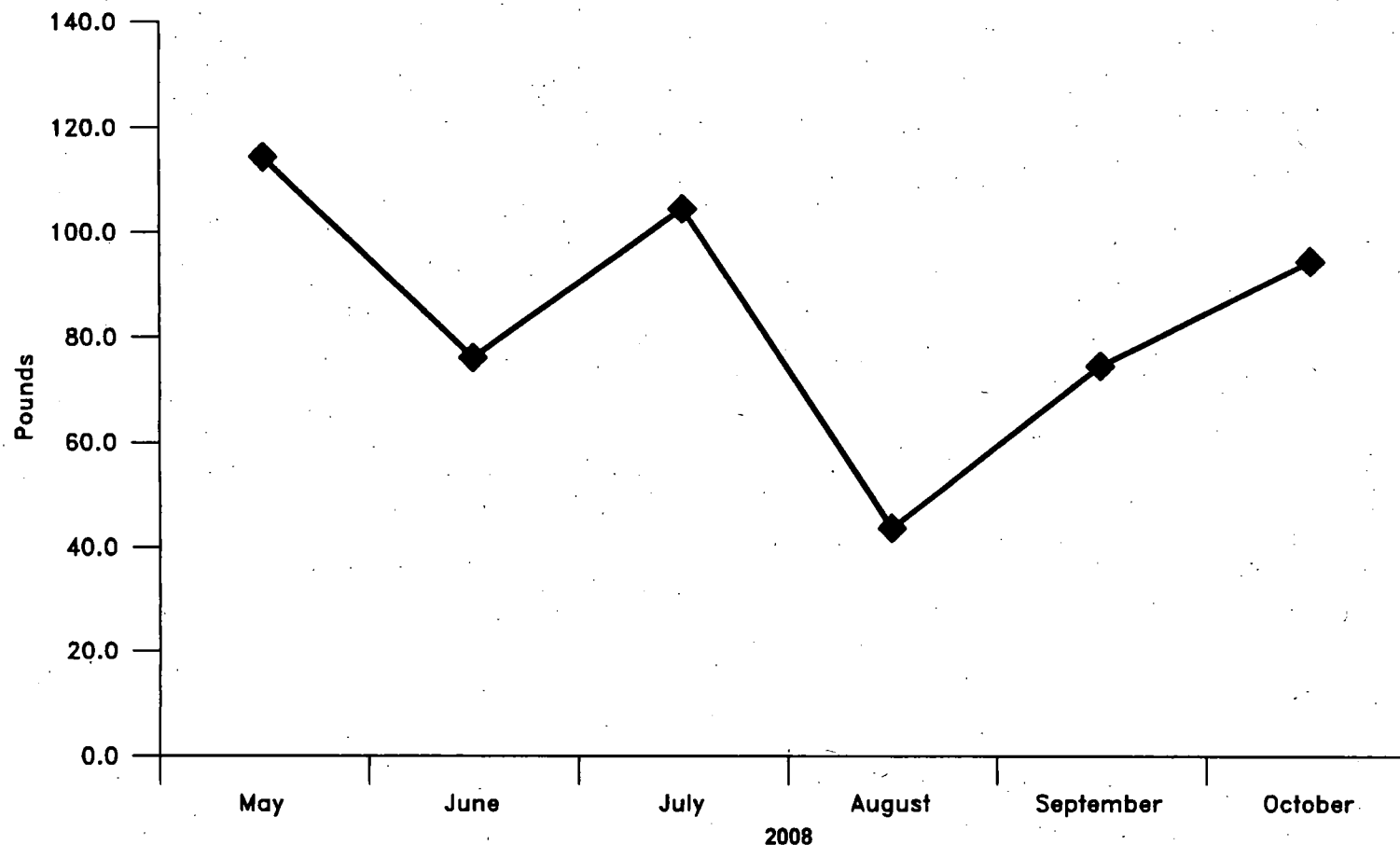



Copies:

J. Morettini, PADEP

G. Kickel, LORD Corporation

XREFS: PROJECTNAME: —



LORD SHOPE LANDFILL GIRARD, PENNSLVANIA OH000933.2009	
2008 ISVS INFLUENT DATA (MAY THROUGH OCTOBER)	
 ARCADIS	FIGURE 2

*Pounds per month based on thermal oxidizer influent analytical data collected monthly during ISVS system operation.